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THREE NEW CADDISFLIES FROM MAHÉ ISLAND, SEYCHELLES

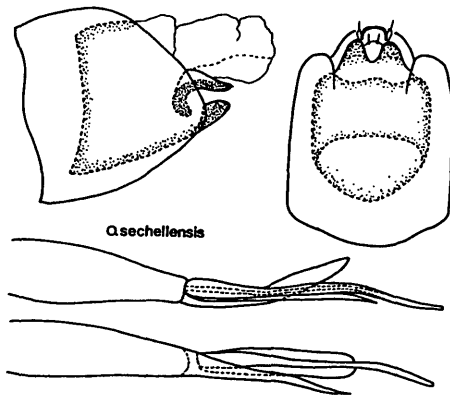
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Abstract. *Oxyethira sechellensis* n.sp., *Ecnomus maheensis* n.sp. and *Seselpsyche matyoti* n.gen., n.sp. are described and figured. *Ecnomus insularis* Ulmer is figured.

In December 1992 I spent two weeks on Mahé Island to study the biology of the extraordinary larva of *Hughscottiella auricapilla* which will be published elsewhere. I found three new species which bring the number of known Mahé species to 10, so the fauna is probably not as poor as earlier believed (Malicky 1992), and more species may be found. The material is in my collection. I want to thank Dr.F.Schmid and Dr.K.M.F.Scott for valuable information, Mr.Pat Matyot for his kind help during my stay on Mahé, and Dr.M.I.Crichton for the correction of the English text.

***Oxyethira sechellensis* n.sp. (Hydroptilidae)**

Pale brownish to whitish, forewing length of the ♂ 1,2mm. Spur formula 024, ocelli present. ♂ genitalia (figure): Segment 9 is almost completely



Oxyethira sechellensis ♂ genitalia: lateral and ventral views; phallus in two different views.

included in segment 8. In lateral view, segment 8 has an almost straight anterior edge, and its caudal edge has almost the form of a half circle. Ventrally the inner edges of the lateral lobes of segment 8 become progressively less defined anteriorly. Between these lobes are the button-like inferior appendages. The subgenital process is angulate; the bilobed process (in the terminology of Kelley 1984) originates outside near the tip of the latter. The dorsocaudal part of segment 9 and segment 10 are membraneous. The basal half of the phallus is broad. From its middle onwards it is long and slender, where two narrow lobes originate; one of them is pointed (this is probably the titillator), the other distally rounded.

It is not clear to which group within *Oxyethira* this species belongs. There are similar structures in the phallus, with the two appendages, in *O.velocipes* Barnard from South Africa and *O.flagellata* Jacquemart 1963 from Reunion which means that it may be placed in the subgenus *Argyrobothrus*, which is however difficult to characterize (Kelley 1984:451).

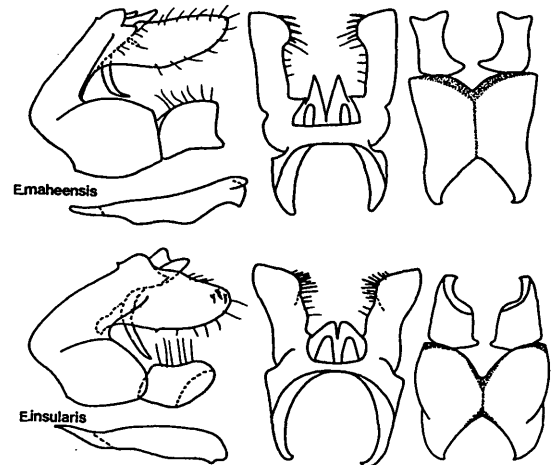
Holotype ♂: Mahé, Anse aux Pins, 19.12.1992. - From the same place I have also one female which may belong here.

***Ecnomus maheensis* n.sp. (Ecnomidae)**

My material includes two *Ecnomus* species which occur together. *E.insularis* Ulmer (1910) is easy to recognize from the original description and figures. For comparison its genitalia are figured here (figure). In *E.maheensis*, the body is whitish to brownish; legs and antennae whitish, palps brownish. Forewings pale brown with some light speckles along the costal edge. Forewing length ♂ 4-4,5mm, ♀ 4-5mm.

(It is smaller and darker than *E.insularis* whose forewings are light brown with some brown clouds and many yellowish speckles, with a length of 4,5-5mm in the ♂ and 4-5mm in the ♀.)

Abdomen dorsally brownish violet. ♂ genitalia (figure) similar to *E.insularis*, but the ventral



Ecnomus maheensis ♂ genitalia: lateral, dorsal and ventral views. - *E.insularis* ♂ genitalia: lateral, dorsal and ventral views.

inner edge of the inferior appendages is long, straight and pointed; in *insularis* this edge is very short, causing a large distal concavity.

Holotype ♂ and several ♂ and ♀ paratypes: Mahé, Anse aux Pins, 19.12.1992; paratypes also from Rivière du Cap and Mare aux Cochons.

It may be noted that both *Ecnomus* were captured along Rivière du Cap as well as in the mangrove nearby where a brooklet flows in and reduces the salinity of the water. Also the new *Oxyethira* was found in this mangrove.

***Seselpsyche* new genus (Sericostomatidae ??)**

A small, dark insect with the general appearance of a helicopsychid. Head short and broad, dorsally with two divergent long warts. Eyes of intermediate size. Scape long and thick, irregularly pear-shaped with a small distal cavity. Pedicel roundish, the remaining antennal segments cylindrical. Maxillary palps small, one-segmented, with a small dorsal branch, bent towards the face. Labial palps large and three-segmented. Tentorium as in fig.6, without dorsal branches. Pronotum, mesonotum and mesoscutellum each with a pair of warts, metanotum and metascutellum without warts. Legs as in fig.8; protarsus with two ventral and a pair of distal fine black spines, the remaining tarsal segments with a distal pair each which are hidden in the dense hair cover. Spur formula 222, the outer spurs half as long as the inner ones. Wing venation (fig.7): Both wings with complete Sc and R system. Between the stems of Sc and R is a long sclerotization. The media-cubitus complex is hard to interpret; in the forewing is a basal loop which is continued in a stem from which one fork (probably the media) and one undivided vein originate. In the hindwing there is only one long fork. Three analis veins run free to the edge in the hindwing, and in the forewing the second and third fuse only, shortly before their ends. There is

no basal loop. The sclerotized wing points are lacking. Fore- and hindwing are interconnected by one row of strong, long, straight and stiff hairs along the costal edge of the hindwing and the hind edge of the forewing. The abdominal sternites have no spines or tongues but many granules with surrounding whitish circles so that a superficial similarity with the meshwork of helicopsychids exists.

Genotype: *Seselpsyche matyoti* n.sp.

***Seselpsyche matyoti* n.sp.**

Body, wings and appendages with a dense cover of long black hairs, but the pilosity of the maxillary palps is lighter. Forewing length 3,5mm. ♂ genitalia (fig.9-11): Segment 9 dorsally and

ventrally short, but laterally with a long triangular cephalad lobe. Segment 10 large and roof-like. Preanal appendages short, oval and slender. Intermediate appendages are lacking. Inferior appendages deeply bifurcate, the ventral part finger-like, the dorsal part as long as the former, but somewhat bent upwards and dilated, in dorso-ventral view with a short inner distal point. Phallus long, slender, bent subbasally, with two dorsal longitudinal keels.

Holotype ♂: Mahé, Casse Dent, 12.12.1992.

This species is dedicated to Mr. Pat Matyot.

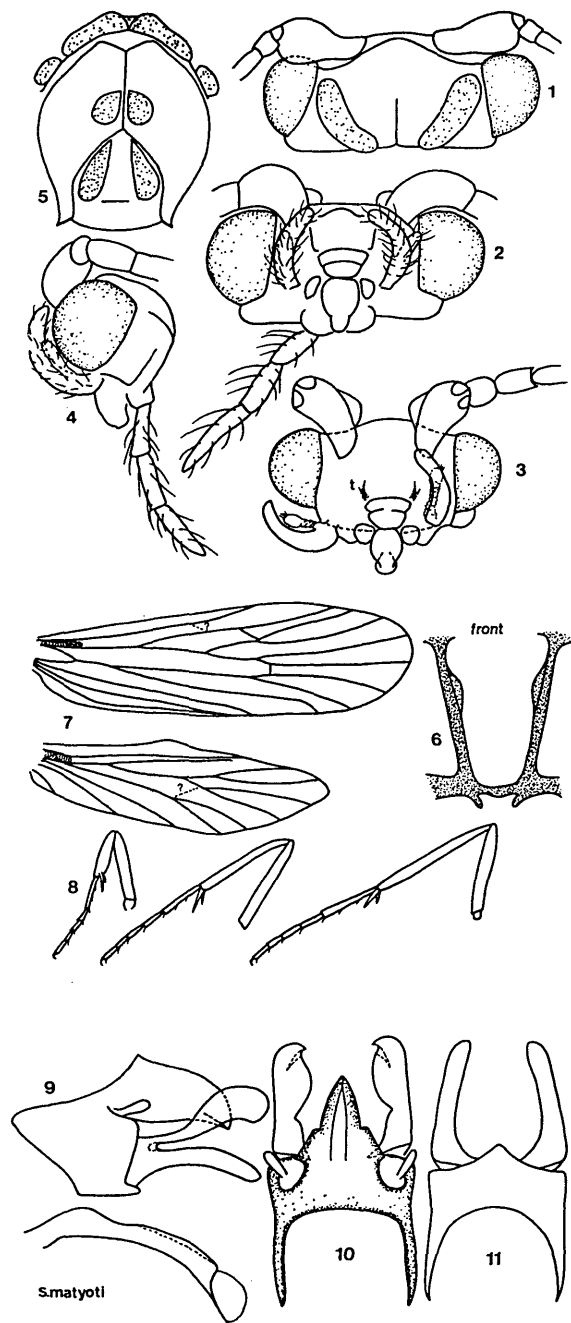
The systematic position of this insect is puzzling. At first glance one could think of a helicopsychid because of the slender but rounded wings, the arrangement of warts, the abdominal sternites with the slightly reticulated surface, the long pilosity and the fine black tarsal spines. Other characters do not agree: the spur formula, the maxillary palps which resemble those of brachycentrids or *Asahaya*, the unique wing venation, and the interconnection of the wings. In the "leptocerid branch" many groups have a row of fine hooks in the basal half of the costal edge of the hindwings which link with a strong ledge of the forewing, e.g. in leptocerids, molannids, helicopsychids, beraeids, odontocerids, conoesucids, *Philanisus*, *Ceylanopsyche*, but also in *Apatania*. The two rows of straight, strong hairs interconnecting the wings may also be found in goerids, *Hydrosalpinx*, *Uenoa*, *Thremma* and *Moropsyche*. These structures are probably not always homologous because both possibilities occur in the subfamily Apataniinae. There are more possibilities of interconnection, e.g. overlapping lobes, which are found mainly in larger species of various families.

Scape, maxillary palps and the basal wing sclerotization between Sc and R are similar in the relictary sericostomatid *Asahaya asanbaddha* Schmid (1990) from South India, but the venation is very different. These sclerotizations are also present in *Uenoa* and *Thremma*. The form of the tentorium agrees with Sericostomatidae and Helicopsychidae (Neboiss 1991).

The wing venation is very unusual. The M-Cu system is reduced, but the An system has no basal loops, and its veins are long and free or unite only shortly before the end. Without knowledge of the relatives the meaning of this character is not clear; it may be secondary but also very primitive. I have not found any other caddisfly in the literature with this condition of the An system. Ulmer (1907, fig.96) has figured these conditions in the forewing of *Thremma*, but this figure is not correct: the true condition is figured by McLachlan (1874-80:pl.XXIX) (where, however, the figure of the hindwing is wrong, and this figure was also reproduced by Malicky (1983:136) and Vineyard & Wiggins (1988:369)).

It may be mentioned that Marlier (1978) has described and figured a small larva under the name of *Leptodermatopteryx tenuis* which was found in the same place, but there is no evidence that it belongs here.

According to the present knowledge, I hesitate to place *Seselpsyche* definitely in any family, but put it provisionally in Sericostomatidae (in the former sense as "litter box"). It may well belong to a separate family, but without knowledge of the female and the larva this cannot be decided. In any case, it is a very old relict of gondwanian origin like other animals on the granitic Seychelles, e.g. *Hughscottiella*.



Seselpsyche matyoti, male: 1..head in dorsal view; 2..head in ventral view; 3..head in ventral view after maceration, with tentorial pits (t); 4..head in lateral view; 5..thorax dorsal; 6..tentorium in dorsal view; 7..wing venation; 8..legs; 9-11 genitalia, 9..lateral, 10..dorsal, 11..ventral.

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Photographs from the 7th Trichoptera Symposium, Umeå, 3 - 8 August 1992:



Kuranishi, Mey, Chen



C.Otto explaining